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nursing home use in the 1990's

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**Deja-Vu All Over Again, -- Or Is It? Nursing Home Use in the 1990's.**

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## **Abstract**

The advent of hospital prospective payment and an accompanying increase in Medicare financing of skilled nursing facilities prompted an assumption that nursing homes were serving a higher proportion of short-term or sub-acute residents. Findings from a comparison of national nursing home survey data from 1977, 1985, and 1995, and from 1995 admissions data from Ohio, indicate that length of stay patterns have remained relatively constant. Comparative data do, however, suggest a small increase in the short stay resident and clearly show differences in the characteristics of residents over time. An analysis of the shifts in long-term care use suggests a complex series of factors influencing the length of stay and case mix of the modern day nursing facility.

## **Introduction**

Since the early 1980's a series of initiatives in health and long-term care policy have significantly altered the long-term care delivery system in the United States. Policy actions at both the federal and state levels, and private sector efforts have expanded the amount of in-home care, reduced the length of hospital stays, created mechanisms to contain long-term care costs through the development of pre-admission review systems and through controls on nursing home reimbursement, and expanded long-term care housing and service options. Although these policy developments have been widely examined, we do not know how nursing home utilization has been affected as a result of these combined changes.

Our work for this paper grew out of an evaluation of Ohio's efforts to modify the state's approach to delivering long-term care (Applebaum, Mehdizadeh, Straker, & Pepe, 1995). As part of the evaluation we examined the volume of nursing home applicants and the length of stay for those individuals ultimately admitted. During the initial study year, 1994, Ohio reported over 57,000 new nursing home admissions and an additional 22,000 residents either converting from non-Medicaid status to Medicaid, or changing nursing facilities. For a base of 94,500 total nursing home beds these new admissions and conversions represented substantial turnover in the nursing home population. In fact, a review of a cohort of nursing home residents admitted in 1994, showed almost half of the new residents (47.5%) were no longer in the nursing facility within three months. Combining this length of stay information in Ohio nursing homes with interviews with nursing facility administrators who continually discussed "the short stay resident" and the "sub-acute phenomena in long-term care," we drew an initial conclusion that there was a change occurring in how nursing homes were being used. Although changes in practice are occurring, this paper, which examines data from National Nursing Home Surveys of 1977, 1985, and 1995 along with Ohio data from 1994-96, finds that the short term stay, 3 or 6 months in duration, is not a new phenomenon in nursing home service delivery. It appears however, that there has been an increase in the number of very short stay residents and it is clear that the functional characteristics of nursing home residents have changed over this time period. This paper will explore service use patterns and case mix over time in an effort to more clearly describe where changes have and have not occurred in the nursing home industry in the last 20 years.

## **Background**

A policy development that dramatically affecting how care is delivered is the hospital prospective payment system. Since the implementation of this reimbursement strategy the average length of stay of hospitalized Medicare recipients has declined from ten days in 1983 to seven days in 1995 (United States General Accounting Office, 1996). The growth in Medicare home health expenditures and an increase in Medicare nursing home expenditures are at least partially related to these changes. In 1988, Medicare spent about \$1 billion on skilled nursing care. By 1992 that number had increased to \$4.5 billion and by 1996 expenditures had topped

\$10 billion (Prospective Payment Assessment Commission, 1993; United States General Accounting Office, 1996).

About two-thirds of the states use a pre-admission review of nursing home applicants prior to placement (Applebaum, Mehdizadeh, Pepe, Straker, 1996). States have also attempted to limit expenditures by shifting to a case mix and/or prospective reimbursement system for nursing homes receiving funds from Medicaid. Both of these efforts were designed to control the growth rate and alter nursing home utilization patterns. To some extent, these strategies have been effective. In 1985 there were 46 nursing home admissions per 1,000 older persons, by 1995 this utilization rate had declined to 41 admissions per 1,000 (U. S. House of Representatives, 1997). During the same time period, however, absolute numbers of older people increased, and the average Medicare payment for a day of skilled nursing facility care increased from \$65 to \$267 (U. S. House of Representatives, 1997).

In addition to service expansion, there has been considerable growth in housing with service options for chronically disabled individuals. Through a combination of private sector initiatives, including over 20 publicly traded assisted living companies, and state efforts to target Medicaid funds to these settings, assisted living is rapidly being developed throughout the United States (Mollica & Snow, 1996).

These factors, including the expansion of in-home care, shifting hospital reimbursement incentives, restrictions on nursing home entry, and the development of the assisted living industry represent a significant change in the way long-term care is financed and delivered. The nursing home remains a key element of the long-term care system, but how have these factors affected the way nursing homes are used? Has there been a change in the characteristics of those using nursing homes, or in the length of stay of residents?

## **Methods and Data Collection**

This study relies on three waves of the National Nursing Home Survey, supplemented by a detailed data base assembled for the state of Ohio. Secondary analysis and published reports from National Nursing Home Surveys conducted in 1977, 1985, and 1995 provide the national data (Liu, Coughlin, & McBride, 1991; Liu & Manton, 1983; Liu & Palesch, 1981; Spence & Wiener, 1990; VanNostrand, et al, 1977). For these surveys data were collected from current residents, discharged residents, next of kin, and staff through personal interviews and self administered forms. Next of kin were surveyed to gather additional resident information and/or information about discharged residents. Unfortunately, the discharged residents component was not completed in 1995. For this reason, we relied on State of Ohio data to examine length of stay in 1995.

The Ohio data come from three statewide databases: 1) A Pre-Admission Review (PAR) database, which records each entry into a licensed nursing facility, 2) the Nursing Facility: Minimum Data Set Plus (MDS+), which includes admission information and characteristics of

all residents of Medicaid certified nursing facilities in Ohio, and 3) Ohio mortality records. The Nursing Facility Minimum Data Set Plus (MDS+) contains quarterly assessment data for individuals who are residing in Medicaid-certified nursing facility beds on the last day of each calendar quarter; this database does not capture the turnover of residents during the quarter.

For the length of stay calculations we used the PAR data, taking all residents who were newly admitted to Ohio nursing homes during the first quarter (January through March) of 1994 and following them for two years. For all other analyses we used Ohio's MDS+ data base for December 31, 1995. These quarterly data are similar to any other quarter we could have chosen; our examination of 12 consecutive MDS+ databases showed that the Ohio nursing home population profile was quite consistent over time.

## **Length of Stay Across National Studies**

Based on the high numbers of Ohio short-stay residents and interviews with nursing home administrators we drew an initial conclusion that nursing homes were serving an increasing proportion of short stay residents. To confirm this finding we examined data from the National Nursing Home Surveys of 1977, 1985, and 1995 which included information both on length of stay and on nursing facility resident characteristics.

In 1977 and 1985 the National Nursing Home Surveys included a random sample of discharged residents who were selected for interviews. The information for discharged residents care for reviewing their records interview with the facilities that they have been staying and with their next of kin. These residents were selected irrespective of their discharged status, alive or dead. The length of their most recent stay as well as all other stays were reported in the discharge survey. No such survey was completed in the 1995 national study. To estimate length of stay for 1995, we assembled a detailed data base for Ohio. To calculate length of stay during 1995 for the residents of Ohio nursing facilities, we selected those admitted to nursing facilities during the first quarter of 1994 and followed them, as a group, for 24 months. Discharged residents are those who were not located in the following quarterly MDS+ data base; because no discharge information is available the exact date of discharge is unknown. We estimated the date of discharge in order to calculate length of stay by assuming that all residents discharged left the facility at the midpoint of the quarter. Thus, all of those who went through pre-admission review but were not found in the MDS+ data at the end of the first quarter were assumed to have a length of stay of 45 days. Although no one state is representative of the nation, we believe that Ohio long-term trends are not unique.

The two approaches differ in that the Ohio data are right-truncated; that is, the maximum length of stay for this cohort of new admissions has not yet been reached. However, as our results show, the proportion staying a long period of time is relatively small. In addition, because we are interested in the proportion of this particular cohort that remains in the nursing home at different time periods, rather than average length of stay, which would be affected by longest stays, we believe this method is appropriate.

In Table 1, data on nursing home length of stay nationally in two time periods, and for Ohio between 1994 - 1996 are presented. Comparative data for the three time periods indicate that the short stay is not a new phenomenon, but rather has been a consistent occurrence over the past two decades. The length of stay data for Ohio in 1995 showed that 63.3% of those entering nursing homes were no longer residents after six months. The comparable national numbers for 1977 and 1985 were 65.8 % and 62.8% respectively. Although Medicare funds, which cover short stays in nursing homes, have increased in sheer dollars and as a proportion of nursing home expenditures, the data for those residing three months or less does not show an increased proportion of short-term discharges for the Ohio nursing home residents (47.6%). Three month data for 1977 showed 53.7% of residents no longer in the nursing facility compared to 51.9% for 1985. The numbers remain comparable over time with the percentage of residents discharged within one year during 1977, 1985 and Ohio's 1994 - 1996 showing 75.8%, 73.9%, and 72.6%, respectively.

To further study the length of stay issue we used a second approach. Rather than following new residents from the beginning of their stays, or tracking discharged residents back to their admission dates we examined the length of stay of individuals in residence at a particular point in time. To address this question data are available from all three of the National Nursing Home Surveys, based on admission dates reported by current residents in 1977, 1985, and 1995 (see Table 2). Our data show that despite the high proportion of brief stays among new admissions, short stayers represent a relatively small proportion (12-17%) of residents in the three survey years. In fact about two-thirds of the residents had lived in the nursing home for one year or longer.

The percentage of residents who have been in nursing homes less than three months in 1995 did increase to 17.3 percent, compared to 12.4 percent in 1985 and 14.5 percent in 1977. The snapshot data for Ohio showed 12% of residents living in nursing homes three months or less. This suggests that the Ohio length of stay experience may be lower than the national average, and thus the longitudinal Ohio data presented earlier might under represent the national experience. The jump from 12.4% to 17.3% of short stay residents represents an increase of 39%. Because an increase in short-term stays increases the under-counting that occurs in the snapshot methodology, this result indicates a sizable change in utilization rates. Since the 1977 number was actually higher than the 1985 proportion, the results are slightly more equivocal. These changes could reflect the increased use of Medicare. For example, in Ohio in 1992 just over 30,000 nursing home admissions used Medicare, while by 1995 that figure had increased to over 60,000. Whether these increases, and the accompanying increase in Medicare expenditures on skilled nursing facilities, reflect changes in use patterns or merely efforts of the industry to maximize Medicare reimbursement is not clear. We suspect that both factors are at play, with the outcome being an increase in those staying 20 days or less in an effort to maximize favorable Medicare reimbursements. Thus, while the 3 and 6 month rates are comparable, we theorize that the proportion of residents staying 20 days or less has increased.

**Table 1**

Percent Distribution of Discharges by Duration of Stay: 1977, 1985 and for Ohio 1994-1996

Length of Stay	National Nursing Home Survey		Ohio's MDS+
	1977	1985	1994-1996
Less than 3 months	53.7	51.9	47.6
3 to less than 6 months	12.1	10.9	15.7
6 months to a year	10.0	11.1	9.3
More than 1 year	24.2	26.1	27.4

**Source:** 1977 National Nursing Home Survey of Discharged Residents  
 1985 National Nursing Home Survey of Discharged Residents  
 Ohio's MDS+ 1994-1996

**Table 2**

Percent Distribution of Nursing Home Residents by Length of Stay: 1977, 1985, 1995

Length of Stay	National Nursing Home Survey		
	1977	1985	1995
	(Percent)	(Percent)	(Percent)
Less Than 3 Months	14.5	12.4	17.3
3 to Less Than 6 Months	9.4	9.7	10.0
6 Months Less Than 1 Year	12.5	14.3	12.7
1 Year To Less Than 3 Years	32.8	31.5	31.5
3 Years To 5 Years	14.8	13.9	13.9
5 Years +	16.0	18.2	14.6
Population	1,303,100	1,491,400	1,547,089

**Source:** 1977 National Nursing Home Survey of Current Residents  
 1985 National Nursing Home Survey of Current Residents  
 1995 National Nursing Home Survey of Current Residents



## **Characteristics of Nursing Home Residents**

Although the proportion of residents discharged after 3 and 6 months has changed only slightly over the past two decades, there have been substantial changes in the landscape of long-term care. To help understand these changes we examined the demographic, functional, and mortality characteristics of nursing home residents from the same three survey time periods.

A review of demographic characteristics indicates some modest changes in residents over the past two decades (See Table 3). The proportion of nursing home residents in the older age groups is increasing, with those age 85 and older growing from 35% in 1977, to 41% in 1985, to 47% in 1995. There do not appear to be major changes in gender or marital status. However, there is a change in the racial composition of nursing home residents. The proportion of non-white nursing home residents increased from 7.8 percent in 1977 to 11.7 percent in 1995.

A review of functional characteristics indicates that nursing home residents have become increasingly more disabled over the last 20 years (See Table 4). On the four common activity of daily living (ADL) measures there is a consistent pattern of increased impairment across the three survey time periods. For example, the proportion of those in 1977, 1985, and 1995 impaired in bathing increased from 86% to 89% to 95%; in dressing from 69% to 76% to 85%; and in using the toilet from 53% to 61% to 71%. The proportion of those independent in ADL functioning dropped from 10% to 3% between 1977 and 1995, while the proportion of those dependent in four ADL's went from 10% in 1977 to 12% in 1995.

**Table 3**  
Comparison of the Demographic Characteristics of Nursing Home Residents:  
1977, 1985 and 1995

	National Nursing Home Survey		
	1977	1985	1995
Age	(Percent)	(Percent)	(Percent)
under 65 years	13.6	11.2	8.1
65-74 years	16.2	14.2	12.2
75-84 years	35.7	33.9	32.8
85 years and over	34.5	40.7	46.9
Sex			
Male	28.8	28.3	27.3
Female	71.2	71.7	72.7
Race or Ethnicity			
White (not Hispanic)	92.2	92.1	88.3
Black (not Hispanic)	6.2	7.0	9.6
Hispanic and others	1.6	.9	2.0
Marital Status			
Married	11.9	16.1	16.6
Widowed	2.2	55.9	60.4
Divorced or separated	6.7	7.6	7.2
Never married/single	19.2	18.2	14.9
Unknown	---	2.2	.9
Population	1,303,100	1,491,400	1,548,594

**Source:** 1977 National Nursing Home Survey of Current Residents  
1985 National Nursing Home Survey of Current Residents  
1995 National Nursing Home Survey of Current Residents

**Table 4**  
Comparison of the Functional Characteristics of Residents of Nursing Homes  
1977, 1985 and 1994

	National Nursing Home Survey		
	1977	1985	1995
Percentage Requiring Assistance in Activities of Daily Living			
Bathing	86.3	89.2	95.3
Dressing	69.4	75.7	85.3
Using the toilet	52.5	61.3	71.4
Eating	33.0	39.7	44.2
Walking*	66.1	58.2	77.3
Continence^	45.3	39.3	63.0
Index of Dependency in Activities of Daily Living			
Not dependent in bathing, dressing, using toilet, walking, continence, or eating	9.5	8.3	2.7
Dependent in only one activity	12.3	9.7	5.9
Dependent in bathing and one additional activity	12.2	11.9	7.4
Dependent in bathing, dressing, and one additional activity	8.4	10.6	7.0
Dependent in bathing, dressing, using toilet, and one additional activity	9.6	17.1	11.9
Dependent in bathing, dressing, using toilet, walking, and one additional activity	15.7	11.8	20.8
Dependent in all 6 activities	23.4	14.8	33.3
Other	8.9	15.8	11.0
Population	1,303,100	1,491,400	1,548,594

**Source:** 1977 National Nursing Home Survey of Current Residents  
1985 National Nursing Home Survey of Current Residents  
1995 National Nursing Home Survey of Current Residents

\* Walking is lower in 1985 than 1977 or 1995. Authors believe this is due to measurement problems.

^ Percent of residents with problem with continence in 1985 is substantially different from 1977 and 1995. Authors believe this is due to the way continence was measured each time.

We also examined mortality statistics for those residents discharged across the study years. Again, because the 1995 national survey did not provide discharge data, we rely on the Ohio experience. The proportion of residents discharged due to death after one year increases across the three study years; 16.7% in 1977, to 17.4% in 1985, to 21.5% in Ohio between 1994 - 1996. Most noteworthy, however, is the shift in discharge rates over the course of the year (see Table 5). In each of the three time study periods the majority of residents discharged before three months of residency (four-fifths) were residents going back to the community. After longer periods of residency, however, reason for discharges are significantly different between the 1977 and 1985 samples, and the Ohio data. For example, in Ohio about four out of ten (42%) discharges between three and six months were a result of death and over two-thirds (69%) of the discharges between six months and one year were due to death. In contrast, in 1977 and 1985 only about one quarter of discharges occurring between six and twelve months of residency were due to death. This provides another indicator of the case mix changes experienced by the nursing home industry.

**Table 5**  
Discharges within the First 12 Months of Admission by Status

	National Nursing Home Survey				Ohio MDS+	
	1977		1985		1994-1996	
	Live	Dead	Live	Dead	Live	Dead
	(Percent)	(Percent)	(Percent)	(Percent)	(Percent)	(Percent)
Less than 3 months	78.4	21.6	77.3	22.7	82.1	17.9
3 to less than 6 months	76.0	24.0	77.0	23.0	58.0	42.0
6 to 12 months	74.0	26.0	72.1	27.9	31.2	68.8

**Source:** National Nursing Home survey of discharged residents survey 1977 and 1985.  
Ohio's 1994-1996 MDS database.

## Discussion of Findings

There is no question that the health and long-term care delivery system has changed in the past two decades. Despite these changes and a common belief that there has been growth in the short stay or sub-acute nursing home resident, our findings suggest that a substantial proportion of nursing home residents have always been discharged with a length of stay less than three months. On the other hand, snapshot data show that the percentage of residents staying three months or less has increased by about 39% over the last ten years although a somewhat lower (19%) change from 1977. This increased percentage of short-stay residents, along with the increased availability of home care and other long-term care options which can prevent or delay nursing home placement, has resulted in a population of older and more functionally impaired nursing home residents.

Thus we find that although there appears to be an increase in short stayers, the short-term stay in the nursing home is anything but new. We had anticipated that as a result of hospital prospective payment and the increase in Medicare nursing home expenditures the proportion of short stay residents would increase more dramatically. Although we believe that the very short stay resident (20 days or less) is more likely, our explanation for the relatively constant patterns involves changes that have occurred throughout the entire long-term care system.

As noted earlier four key factors have combined to shape the current service delivery approach: the expansion of home care, which has allowed a substantial number of chronically disabled individuals to receive care in their own home; the advent of hospital prospective payment, which clearly reduced the length of stay in hospitals, thus requiring individuals to receive care either at home or in a nursing facility; the expansion of housing with service options such as assisted living, that have placed more pressure on nursing home census; and state efforts to control Medicaid expenditures, resulting in many nursing facility actions designed to expand their sub-acute or therapeutic units in an effort to take advantage of favorable Medicare reimbursement rates.

It is our contention that these combined changes have resulted in the current use patterns. Many of the nursing home residents of the previous two decades, even those that were short stayers, may now be served through home health care programs. Some of the residents with lower levels of disability are choosing housing with service options such as assisted living, which combines 24-hour care and increased resident choice. At the same time, many of those who would have been served in hospitals are now receiving care in nursing homes. Because these individuals are increasingly coming from hospitals, nursing homes have been able to maximize Medicare reimbursement.

We must also acknowledge the limitations of our approach; that is, substituting Ohio data because of a lack of a 1995 national discharge sample. While mixing modes and measures has its dangers, we have no reason to believe that Ohio is so unique as to mask all changes that might have been shown if we had access to a national sample. However, the lower proportion of short

stay residents in the Ohio snapshot data indicates that some differences do exist. We verified this assumption through a comparison of resident characteristics which showed no discernible patterns of difference.

We thus end up with this somewhat unanticipated occurrence. The longitudinal discharge data suggest that the short-term stay has been a consistent component of nursing home use. The snapshot data however, indicate that short term use is increasing. In our view these patterns have significant implications for the long-term care field, because they suggest that nursing homes remain organizations attempting to operate with multiple and possibly conflicting objectives. Should they focus on the short-term post-acute hospital discharge, a slightly longer term therapeutic resident, or a long-term resident who would consider the facility their home? With the expectation that home care expansion will be ongoing, that the competition between the hospital and nursing home for the sub-acute resident will mount, and that other environmental alternatives, such as assisted living will continue to expand, the nursing home is likely to feel considerable pressure. The 1995 National Nursing Home Survey (Strahen, 1997) indicate that nursing home occupancy rates have declined from 92% in 1985 to 87% in 1995. What the system will look like in another ten years is unclear. What is clear however, is that the nursing home will continue to struggle to articulate its role in an evolving health and long-term care system.

## End Notes

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